

Commissioner of Patents
Serial No. 10/707,761
Response Date January 31, 2006
Reply to Office Action dated October 31, 2005
Page 2

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An apparatus for producing a gypsum wallboard core, the apparatus comprising:
 - (a) a mixer;
 - (b) an extrusion die comprising a die inlet, a die exit, and a manifold disposed between the die inlet and the die exit, wherein the die inlet is in fluid communication with the mixer, ~~the extrusion die has at least one secondary inlet connected thereto for the introduction of the gypsum ingredients directly to the extrusion die,~~ and the die exit is dimensioned to have a ratio of width to thickness of about 48:1 to about 216:1, so that a slurry passing through the extrusion die is extruded at a substantially similar thickness and width to that of the finished gypsum wallboard core;
 - (c) at least one secondary inlet connected to and in fluid communication with the extrusion die for the introduction of at least one gypsum slurry additive, which is an emulsion or fluid, directly to the extrusion die, so that the gypsum slurry additive can be added to a gypsum slurry passing through the extrusion die;
 - (d)(e) a substantially flat, movable surface disposed adjacent to the die exit; and
 - (e)(d) a dryer.
2. (Original) The apparatus of claim 1, wherein the mixer is a twin screw continuous mixer.
3. (Original) The apparatus of claim 1, wherein the mixer is a single screw mixer.
4. (Original) The apparatus of claim 1, wherein the mixer maintains positive displacement of materials in the mixer.

Commissioner of Patents
Serial No. 10/707,761
Response Date January 31, 2006
Reply to Office Action dated October 31, 2005
Page 3

5. (Original) The apparatus of claim 1, wherein the mixer comprises one or more conduits or injection ports.
6. (Original) The apparatus of claim 1, wherein the die exit has a rectangular cross section.
7. (Canceled)
8. (Original) The apparatus of claim 6, wherein the rectangular cross section has a width of about 4 feet to about 4.5 feet.
9. (Previously Presented) The apparatus of claim 6, wherein the rectangular cross section has a thickness of about 1/4 inch to about 1 inch.
10. (Previously Presented) The apparatus of claim 6, wherein the rectangular cross section has a thickness of about 1/4 inch, about 5/16 inch, about 3/8 inch, about 1/2 inch, about 5/8 inch, about 3/4 inch or about 1 inch.
11. (Original) The apparatus of claim 1, wherein the dryer comprises a microwave heating section.
12. (Original) The apparatus of claim 1, wherein the dryer comprises a convection heating section.
13. (Original) The apparatus of claim 1, wherein the dryer comprises a microwave heating section and a convection heating section.
14. (Currently Amended) An apparatus for producing a gypsum wallboard core, the apparatus comprising:
 - (a) a mixer having a discharge end; and

Commissioner of Patents
Serial No. 10/707,761
Response Date January 31, 2006
Reply to Office Action dated October 31, 2005
Page 4

(b) an extrusion die having a die inlet that is connected to the discharge end of the mixer, a die exit dimensioned to have a cross-section that is substantially similar to the dimension of the finished gypsum wallboard core, ~~and~~ a manifold disposed between the die inlet and the die exit, and at least one secondary inlet connected to and in fluid communication with the extrusion die for the introduction of at least one gypsum slurry additive, which is an emulsion or fluid, directly to the extrusion die so that the gypsum slurry additive can be added to a gypsum slurry passing through the extrusion die.

15. (Previously Presented) The apparatus of claim 14, wherein the die inlet of the extrusion die has a cross-sectional area that is substantially the same as that of the mixer discharge end.

16. (Previously Presented) The apparatus of claim 14, wherein the die exit has a rectangular cross section.

17. (Previously Presented) The apparatus of claim 16, wherein the rectangular cross section has a ratio of width to thickness of about 48:1 to about 216:1.

18. (Previously Presented) The apparatus of claim 16, wherein the rectangular cross section has a width of about 4 feet to about 4.5 feet.

19. (Previously Presented) The apparatus of claim 16, wherein the rectangular cross section has a thickness of about 1/4 inch to about 1 inch.